DOCKET NO.: UPAP0025-100 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: David B. Weiner *et al.*

Serial No.: 09/719,067 **Group No.:** 1632

Filing Date: August 16, 2001 **Examiner:** Ram Shukla

For: METHODS AND COMPOSITIONS FOR DELIVERING PROTEINS TO MACROPHAGE CELLS AND CELLS OF MACROPHAGE DERIVED LINEAGES

DECLARATION OF DR. DAVID B. WEINER PURSUANT TO 37 CFR § 1.132

I, Dr. David B. Weiner, declare as follows:

1. I am an inventor in the above-identified patent application.

2. Attached hereto are Exhibits 2-4 that indicate the level of skill and knowledge of those in the art at the time the above-identified application was filed. The exhibits demonstrate that at the time the invention was made, the drainage patterns associated with parts of the lymphatic system were reasonably well understood and reasonably predictable. The exhibits demonstrate that at the time the invention was made, one having ordinary skill in the art could determine the drainage pattern(s) of the lymphatic system and correlate a site of injection to a particular lymph node using routine methodology without undue experimentation.

3. Exhibit 2 states that "For ... the arms or legs, the lymphatic drainage patterns are fairly predictable: the arm drains to the axilla, and the leg drains to the groin." (Exhibit 2, Oncolog, taken from www3.mdanswerson.org/~oncolog/map.html, page 1). Exhibit 2 further states, "When the drainage patterns are ambiguous, lymphoscintigraphy is used to identify nodal

basins...Lymphoscintigraphy begins with injection of a radiolabeled colloid into the skin...Over the course of a few minutes, the colloid passes through the dermal lymphatics to one or more lymph node basins, where it is taken up by the macrophages in the lymph nodes. A scintillation camera is then used to document the path of the radiolabeled colloid through the lymphatic system." (Exhibit 2, page 2,).

4. Exhibit 3 describes in more detail the method of finding lymph nodes using lymphoscintigraphy. As described on page 1 of Exhibit 3 (taken from www.nucmednet.com/lymph.htm, entitled "Procedure of the Month November 1997), "since one of the functions of the lymph system is to clear small particles, the ...particles injected during lymphoscintigraphy go to the local lymph nodes. Since these particles have a radioactive label, we can find them using nuclear medicine equipment."

5. Exhibit 4 (Eddy et al. World J. Surg. (2001) 25:794-797) describes lymphoscintigraphy and lymphatic mapping for identification for sentinel lymph nodes. In describing the technique the authors sate "investigators obtain a lymphoscintigram to delineate lymphatic drainage." (Eddy, p. 796, left column).

6. These references demonstrate that at the time the invention was made one of skill in the art could identify the site of administration required to deliver a DNA molecule to a specific lymph node based upon the lymphatic drainage system that was either known or that was determined using techniques that would not require undue experimentation.

7. I declare that statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 1/09/04

By: _____

Dr. David B. Weiner

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SERIAL NO.: 09/719,067
FILED: August 16, 2001

Exhibit 1: Curriculum vitae of Dr. David B. Weiner

Exhibit 2: Oncolog: Intraoperative Lymphatic Mapping—Elegant Way to Identify Lymph Node Metastases in Melanoma Patients taken from www3.madanderson.org/~oncolog/map.html

Exhibit 3: "NucMedNet Feature Procedure: New Techniques for Finding Lymphnodes in Cancer Patients" taken from www.nucmednet.com/lymph.htm.

Exhibit 4: Eddy et al. World J. Surg. (2001) 25:794-797

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SERIAL NO.:09/719,067
FILED: AUGUST 16, 2001

EXHIBIT 1 FOR DECLARATION OF

DR. DAVID B. WEINER

CURRICULUM VITAE

DAVID B. WEINER, Ph.D.

Office Address:

University of Pennsylvania
505A Stellar Chance Laboratories
422 Curie Drive
Philadelphia, PA 19104
(215) 349-8365 (215)-573-9436 (Fax)

Education:

1974-1978	B.S.	SUNY at Stony Brook, NY (Biology)
1981-1985	M.S.	University of Cincinnati, Cincinnati, OH, (Biology)
1981-1986	Ph.D.	University of Cincinnati, Cincinnati, OH, Developmental Biology Graduate Program, College of Medicine

Postgraduate Training and Fellowship Appointments:

12/1/86-6/30/88 Immunology Research Fellow: Division Director, Mark I. Greene, M.D., Ph.D., Department of Pathology and Laboratory Medicine University of Pennsylvania

Faculty Appointments:

7/1/88	Research Associate of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA.
7/1/89	Research Assistant Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA.
9/1/89	Wistar Institute, Assistant Professor, University of Pennsylvania School of Medicine, Philadelphia, PA.
7/1/90	Wistar Institute Assistant Professor of Medicine (secondary), University of Pennsylvania School of Medicine, Philadelphia, PA.
7/1/93	Assistant Professor of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA.
7/1/95	Associate Professor of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA.
9/1/98	Associate Professor of Pathology and Lab Medicine Adjunct in Otorhinolaryngology: Head and Neck Surgery. University of Pennsylvania School of Medicine, Philadelphia, PA.

Hospital and Administrative Appointments:

1990 –1993	Director of Biotechnology, Wistar Institute, Philadelphia PA
1996 - 2000	Chair, AIDS and Infectious Diseases Research Program, Institute for Human Gene Therapy
2003	Member-University of Pennsylvania CFAR Executive Committee
2003- present	Member Pathology & Laboratory Medicine Roundtable

Awards, Honors, and Memberships in Honorary Societies:

1973-1978	Regents Scholarship Award
1974	Bay Ridge Medical Society Award for Excellence in Science
1976-1977	Lupus Foundation of Greater New York Biomedical Research Awards
1982	Lions Club Service Award
1982-1983	Graduate Research Fellowship - Academic Year
1983	Weinman Summer Fellowship
1983-1984	Graduate Research Fellowship - Academic Year
1984	URC Summer Fellowship
1984	Sigma Xi Research Fellowship
1984-1985	President Biomedical Graduate Student Association.
1985	Sigma Xi Young Investigator Award
1985	URC Summer Fellowship
1991	1991 Rose Award Sponsor
1993	Rose Award Sponsor
1993	Philadelphia Business Award top 100 Philadelphian's of 1993
1994	WHO AIDS Research Laboratory Advisory Meeting
1995	The B.F. Goodrich Collegiate Inventors Program-Honorable mention
1997	The John Morgan Society
1998	Nobel Symposium on DNA Vaccines, Stockholm
1998	Pfizer Traveling Fellow
1999	US Department of Health and Human Services, Public Health Services NIH Recognition Award
2000	Outside Thesis Opponent – Karolinska Institute, Stockholm
2001	ICAAC-ASM-Program Committee Award- Outstanding study in Microbial Pathogenesis
2001	Nobel Symposium on HIV Vaccines, Stockholm
2002	Outside Thesis Opponent – Karolinska Institute, Stockholm

Membership in Professional Societies:
*American Association for the Advancement of Science
*International AIDS Society
*American Society for Microbiology
*Clinical Immunology Society
*FASEB-American Association of Immunology
*Greater Philadelphia Economic Development Council
*Pennsylvania Biotechnology Association
*Ben Franklin Technology Council
*International Working Group on the Standardization and Control of Nucleic Acid Vaccines

Service Positions:
-Senior Editor, DNA and Cell Biology
-Section Editor, Viral Immunology
-Editorial Board, Immunologic Research
-Editorial Board, Gene Vaccines & Therapy
-Pennsylvania Biotechnology Association
-Pennsylvania Bar Association- Special Section on Biomedical issues (1997)
-Special Consultant-NY City Dept of Consumer Affairs, AIDS Fraud Division (1994-1999)
-Gordon Conferences: Chair, Genetic Vaccines (1998).
-Special Consultant-FDA-CEBR-Biologics (1995-present)
-NIAID/NIH-Study Section-NCVDG Ad Hoc –1993, 1994, 1995, 1997.

-NIAID/NIH Study Section -Ad Hoc-1994, 1995, 1997, 1998, 1999.
-NIH Inter Institute Program review for the Development of HIV related Therapeutics 2002
-NIAID/NIH study Section permanent Member AAR4 (1994-2001) Ad Hoc 2003
-WHO Special Advisor Genetic Vaccines 1993, 1995, 1998
-WHO/NIBSC Special Advisor – Safety of Molecular Adjuvants and DNA Vaccine technology 1999
-WHO Advisory Panel 2000- Issues for Implementation of HIV Vaccines in Developing Nations.
-WHO Advisory Panel 2000-Safety Issues facing DNA vaccines
-Faculty Review Panel - Institute Pasteur,
-Advisory Board for the National Center for Study of Aging in Chimpanzees (1997-2000)
-Guest Editor-Your World, Biotechnology and You 2000
-National Institute of Biological Standards and Control (European FDA Advisory Board Member) – Genetic Vaccines & Therapeutics, 1997-Present
-Galaxo Smith Klein – GSK/SK – PEARL Advisory Panel Member (1997-2003)
-Special Advisor American Home Products – Vaccines (1998-Present)
-U.S. civilian Research & Development Foundation(CDRF) Review Committee 2001, 2002, 2003
-EPIVAX- Advisory Board 1999-Present
-Global Alliance to Immunize Against Aids- GAIA- Advisory Board- 2001-Present
-Advisory Board - RIGHT (2000-2004)
-Scientific Review FWF-Austrian Science Fund (2001, 2002, 2003)
-Faculty Promotion Review Committee- Institute Pasteur, Paris 2001
-Department of Veterans Affairs- Merit Review Subcommittee for Infectious Diseases (2001-Present)
-Board Member CANVAC (Canadian Vaccine for Aids Council) –2001-Present
-NIAID/NIH-Study Section - HIV Vaccine Design and Development Team Review Panel 2002 & 2003
-PBS television and webcast-NOVA-Advisory consultant - Bioterrorism - Nov 2002
-Faculty Promotion Review Committee- University of London, England 2002
-Advisory Board Review Panel - Elan Pharmaceuticals – 2002
-Oregon Pubic Television Series on gene Therapy Episode #8 Building DNA vaccines (David Weiner) 2002
-Advisory Board-European Commission for an AIDS VACCINE INTEGRATED PROJECT (AVIP)
-AACTG- Immunology RAC (I-RAC) – 2003
-HIV Experimental Vaccine Directory Review – AmFar –2003
-Forum For Collaborative HIV Research - Therapeutic Vaccines: Moving The Field Forward - Panel Member- 2003
- The Welcome Trust – International Senior Research Fellowship in Biomedical Science - Reviewer – 2003.
- NIAID/NIH Study Section- CFAR Special Emphasis review panel- 2003.
- NIAID/NIH Study Section-Special Emphasis review panel- loan repayment program- 2003.
- NIAID/NIH Study Section- Special Emphasis review Panel- ZRG1Microbila Immunology-2003
- AAAS Research Competitiveness Service- Faculty Grant Competition Review Panel- 2004.

Training and Major Teaching and Clinical Responsibilities for the University of Pennsylvania,

Course Teaching:

Division of Rheumatology	1989 - 1999	Fellows Training lecture in Molecular Biology
Department of Otolaringology	1992- 2000	Fellows Training lecture in Immunology
Rheumatology Bridge	1993-2000	molecular biology/ immunology Section

Medical School Immunology Course Director 1997, 1998,
Medical School Immunology Course Instructor 1995, 1999, 2000, 2001, 2002
Graduate School Course in Gene Therapy – Instructor 1996 - Present
Medical School Frontiers in HIV course – Instructor 1999 - Present
Bioengineering – Biotechnology Course – Instructor 1999 - Present
Immunology 999 – Instructor 1999-Present

Microbiology 520 - Instructor 2000-Present
Frontiers in HIV Medicine – lecturer 2000-present
Abramson Cancer Center University of Pennsylvania Post Graduate Program – Current Aspects in the Diagnosis and Treatment of Prostate Cancer – Immune Therapy for Prostate Cancer – 2003.
Course Director – Vaccination and Immune therapy – 2003
Member – U. Pennsylvania - Graduate Group in Immunology 1992 – present
Member – U. Pennsylvania - Graduate Group in Pharmacology 1993 – present
Member – U. Pennsylvania - Graduate Group in Cell and Molecular Biology 1996 – present
CFAR- Developmental Core Pilot Project Grant Review 2003.
Emerging Infectious Diseases- 2003- Lecturer
Pharmacology Graduate Lecturer 590 – 2000- 2004.

Academic Committees at the University of Pennsylvania:

1989 Graduate Faculty, Immunology Program, University of Pennsylvania, Philadelphia, PA
1990 Graduate Faculty, Pharmacology Program, University of Pennsylvania, Philadelphia, PA
1993 COAP - Clinician Educator Track - Dept. of Pathology and Lab Medicine, University of Pennsylvania, Philadelphia, PA
1998 Graduate Faculty in Cell and Molecular Biology, University of Pennsylvania, Philadelphia, PA
1995 – Present,
Admissions interviewer for CAMB Graduate Program
Immunology Graduate Program
CAMB Graduate Program
Pharmacology Graduate Program
MD/Ph.D. Candidate interviewer
Medical School Admission interviewer
2003 CFAR- Developmental Core Pilot Project Grant Review
2003 CFAR Executive Committee Member

Patents:

5,338,829 Peptides derived from human immunodeficiency virus-1 GP160

6,667,157 Compositions and methods for the abrogation of cellular proliferation utilizing the human immunodeficiency virus VPR protein

5,763,190 Methods for the identification of compounds capable of inducing the nuclear translocation of a receptor complex comprising the glucocoticoid receptor type II and viral protein R interacting protein

6.468,982 Genetic immunization

6,348,449 Methods of inducing mucosal immunity

6,197,755 Compositions and methods for delivery of genetic material

5,981,505 Compositions and methods for delivery of genetic material

5,962,428 Compositions and methods for delivery of genetic material

5,830,876 Genetic immunization

5,817,637 Genetic immunization

5,739,118 Compositions and methods for delivery of genetic material

5,593,972 Genetic immunization

5,780,238 VPR receptor protein

5,714,316 Chimeric envelope proteins for viral targeting

5,874,225 Identification of compounds that modulate HIV-1 vpr protein activity

5,780,220 Methods and compositions for inhibiting HIV replication

Selected Lectures (1993 -Present):

1993 Conference Co-Organizer-Bioeast 1993. January
1993 Chair-Genetic Vaccination -Genetic Vaccine development, a new approach to developing protective anti-HIV immune responses-Bioeast, Washington DC. January.
1993 HIV-cell Interactions and Anti-HIV Immune Responses, La Jolla Institute for Allergy and Immunology, La Jolla, CA. March.
1993 HIV Genes, Viral Tropism and Cell Entry, DNX, Princeton, N.J. March.
1993 An anti-oncogene is encoded in the HIV genome, Interplex, NYC. March.
1993 Chair: Genetic Vaccination Implications of the Technology, Atlanta ASM. May
1993 Chair: HIV Regulatory Genes and HIV Pathogenesis, Atlanta ASM. May
1993 Genetic Vaccination Induces Protective anti-HIV Immune Responses In Vivo. NJ. IGI. June
1993 Genetic Vaccination against HIV-1. Washington DC, NIAID-DAIDS-NCDDG. July.
1993 Vpr Induction of Cell Differentiation. Washington, DC, NIAID-DAIDS-NCDDG. July.
1993 Induction of Humoral and Cellular anti-HIV Immune Responses Through Genetic Inoculation. Boston - Science Annual Meeting on New Technologies. August.
1993 Pathogenesis of HIV Infection is controlled by a Regulatory Gene. CUNY Dept. Microbiology New York, September.
1993 Cloning and biological characterization of Single chain Fv fragments that mediate Neutralization of HIV-1 *in vitro*. Modern Approaches to New Vaccines Including Prevention of AIDS. Cold Spring Harbor, NY. September.
1993 Genetic Innoculation Induces CTL Responses against HIV. International Biotechnology Conference. Washington, D.C. October.
1993 Vaccination against Human Retroviruses using Plasmid Vectors, ICAAC Symposium. New Orleans. October.
1993 Infectivity and Pathogenesis of HIV. Immune Response Institute. Princeton, N.J., October
1993 Induction of Protective Immunity against HIV-1 by Genetic Inoculation. International European AIDS EVA conference. Munich, Germany. November.
1993 Human Retroviruses-vpr and HIV-1 Pathogenesis. NIH, National Institutes of Health/NCVDG. December.
1994 Facilitated DNA Inoculation Induces Cellular and Humoral Immunity against HIV-1. UCLA Meeting on AIDS. Hilton Head. S. Carolina. January.
1994 Induction of Immune Responses Through Direct Genetic Inoculation. First International Conference on Gene Therapy & Vaccines for Cancer (BioEast 94). January.

1994 Safety concerns : Utilizing Facilitated DNA Inoculation for the Production of In Vivo Immune Responses. NIAID 1PHS AIDS Vaccine Research and Development Subgroup Meeting. Rockville, MD. February.

1994 DNA Immunization for the Induction of in vivo immunity. Walter Reed Ground Rounds in Infectious diseases. February.

1994 Gene Inoculation as a tool to develop Protective Immune Responses In Vivo. Chair. Vaccines New Technology & Applications. CHI. Alexandria, VA. March

1994 Genetic Inoculation Induces Broad Immunity Against HIV-1. 9th Annual Conference on Clinical Immunology. Anaheim California. April.

1994 Facilitated DNA Inoculation for the Generation of Antiviral Immune Responses in vivo. Insitut fur Medizinische Virologe der University of Zurich. Switzerland. May.

1994 DNA Inoculation As a putative HIV Vaccine, 1st International Meeting on DNA Vaccination Technology . The World Health Organization, Geneva, Switzerland. May

1994 Gene inoculation Induces Protective Immune Responses. NCI-FCRDC, Fredrick, Maryland. May.

1994 Anti-HIV -1 Approaches Based on an HIV-1 Regulatory Gene. Maryland Medical Labs. Bethesda, Maryland. June.

1994 Nucleic Acid Inoculation for the Generation of Protective Immune Responses and as a Novel Approach to Gene Therapy. Molecular Genetics and Protein Chemistry Seminar. Pfizer Inc, Groton, Conn. June.

1994 Nucleic Acid Vaccines for the Control of HIV-1 Infection. U.S. Naval Hospital, Bethesda, MD. Molecular Biology Series. July 1994.

1994 Immune Based Therapies For Human Retroviral Infections International Symposium on Cytokines and Immunology Oxford, England, September

1994 CHAIR, HIV Accessory Genes, Annual Laboratory for Tumor Cell Biology meeting. Rockville, M.D. September.

1994 The Role of vpr in HIV-1 Infection and Latency. Annual Laboratory for Tumor Cell Biology Meeting. Rockville, MD. September

1994 CHAIR: Gene Therapy Approaches to HIV-1 Annual Laboratory for Tumor Cell Biology . Rockville MD. October.

1994 Facilitated in vivo DNA Inoculation Generates Expression and Immunogenicity in vivo. Technological Advances for Gene Therapy. Washington, D.C. November.

1994 CHAIR: Facilitated DNA Inoculation Produces Specific Gene Expression In Vivo which Induces Specific Immune Responses in the Absence of Replicating Vector Systems. IBC Fourth Conference on Gene Therapy. Washington, DC. November.

1994 DNA Inoculation can Induce Protective Immununity in Nonhuman Primates: Advances in Gene Therapy. CHI, Washington, D.C. December.

1995 Conference organizer & Chair DNA Inoculation Induces Broad Anti-HIV Immunity In Vivo. Gene Therapy & Nucleic Acid Vaccine Strategies. Bethesda, MD. February

1995 Chair, Direct DNA Immunization for the Production of Anti-HIV Immune Responses in vivo Second International Conference on Engineered Vaccines for Cancer and AIDS. San Francisco, California. March.

1995 Results with Genetic Immunization. Third Annual Conference on Vaccines: New Technologies & Applications. Alexandria, VA. March.

1995 Nucleic Acid Vaccination : Studies in the HIV-1 Model. Southwestern Medical Center. U of Texas at Dallas. May.

1995 DNA Vaccines for HIV-1; Progress Toward Vaccine Development Fourth Annual NCDDG/SPIRAT Meeting/DAIDS/NAIAD, Bethesda MD. July.

1995 Co Chair, HIV Accessory Genes: The role of viral Protein R (vpr) in HIV-1 Pathogenesis, Annual Meeting Laboratory for Tumor Cell Biology. Rockville, M.D. September.

1995 Genetic Immunotherapy for HIV-1, Efficacy in Non Human Primates. Annual Laboratory for Tumor Cell Biology Meeting. Rockville, MD. September.
1995 Development of DNA Vaccines for Clinical Applications. University of Alabama Birmingham Center for Gene Therapy. September
1995 Immune Responses to HIV-1 Developed by DNA Inoculation. Overview and Status of HIV: Conference on Disease, Prevention and Control- Pavia, Italy. October.
1995 Vpr and HIV-1 pathogenesis and protective immune responses. Department of Microbiology, University of Mass. October.
1995 Development of Effective Human DNA Vaccines. Walter Reed Army Medical Center. November.
1995 The Challenge of Vaccine Development for HIV, European Vaccines Meeting- Institute Pasteur, Paris, France. November.
1995 Immune Receptors and Molecular Engineering of Immune Responses. 3M Company, Minnesota. December.
1996 Rational Vaccine Design for HIV, BIOEAST Conference, Washington D.C. January
1996 Vpr Controls HIV Replication in Host Cells. International Conference on Human Retroviruses. ASM. Washington, D.C. January.
1996 Engineering Multicomponent DNA Vaccines. WHO Conference on Genetic Immunization. Washington, D.C. February.
1996 Immune Responses in Non-human primates induced through cDNA Vaccine for HIV-1. WHO Conference. Washington, D.C. February.
1996 Designing safe effective DNA Vaccines-FDA meeting on safety of Genetic Vaccines. Washington, D.C. February
1996 Protective immune response to HIV by DNA vaccination, IBC Conference, Alexandria, VA. February.
1996 Corruption of Host Cells by HIV-1 vpr. University of South Florida Medical Center, Tampa, FL. April.
1996 Development of Human Retroviral Vaccines. Elsevier Science Publishers Lectureship. 12th Annual Clinical Virology Symposium. Clear water Beach, FL. April
1996 DNA Vaccine Design for HIV-1: Combination Antigen Expression Cassettes and Molecular Adjuvant Generate Effective Anti-viral Immunity in Vivo. Genes that Induce Immunity Symposium. Karlinska Institute. Stockholm, Sweden. May.
1996 The Scientific Future of Genetic Immunization. American Society for Microbiology. Aruba. May
1996 Scientific Basis and Potential for DNA Vaccines. Lederlie WLVP Research Meeting. Cooperstown, NY. June
1996 HIV-1 vpr Regulates the state of the Host IARCA International Meeting, Paris, France. June.
1996 From Mouse to Man: DNA Vaccination as a vaccine/immune therapeutic approach for HIV-1. Trinity College, Oxford, England. Sept.
1996 HIV-1 vpr as a Positive Regulator of Viral Production through Targeted Cellular Dysfunction". Workshop on HIV and Cells of the Macrophage Lineage. Verenna, Lake Como, Italy. October
1996 Genetic Immunization-DNA Vaccines. New Insights in HIV Infection and Disease: 3rd Inter. Conf. on Engineered Vaccines for Cancer and AIDS. Hilton Head, South Carolina. October
1996 From Mouse to man: DNA Vaccination for HIV-1. Genetic Immunization, Chairman, IBC USA Conferences. Washington D.C. October.
1996 Gene immunotheraphy for HIV-1. Project Inform. Atlanta, GA 1996. October
1996 Engineering Vaccines in the 1990's. Thomas Jefferson University. Philadelphia, PA. November
1996 Protection in Primates from HIV-1 by DNA vaccination. Dept. of Pathology Seminar Series. NYU. November
1996 HIV-1 vpr as a Target for Drug development. GHI. Novel HIV Therapeutic Strategies. Washington D.C. November
1996 Engineering Genes as Vaccines for newly emerging pathogens. Rabies and Viral Vaccines Conference. CDC. Washington D.C. December

1997 Clinical Responses from DNA Vaccines. Technologies for the 21st Century. ZIA Symposium. New Mexico. January

1997 Engineering DNA Vaccines for HIV-1. Current Aspects of Vaccinology and Molecular Virology. Drug Information Associates. Dana Point, CA. April

1997 DNA Vaccines for HIV-1. HIV Vaccine for Developing Countries. Harvard AIDS Institute. Devon, MA. April

1997 Engineering DNA Vaccines for HIV-1. Harvard AIDS Seminar Series. Harvard AIDS Institute. Boston, MA. April

1997 Immune Responses to DNA Vaccines. Preclinincal and Clinical Development of the New Vaccines. Institut Pasteur. Paris, France. May

1997 Developing DNA Vaccines for Clinical use what we have learned from the first studies. Proposed International Working Group on the Standardization and Control of DNA Vaccines. National Institute for Biological Standards and Control. May

1997 Novel HIV Therapies: from discovery to clinical proof-of-concept. NIAID, SPIRAT/NCDDG-HIV program. Gathersburg, MD. June.

1997 New Opportunities for HIV Therapy: Clinical Update. NIAID, SPIRAT/NCDDG-HIV program. Vienna, VA. June.

1997 Primate Models Generated by Mannalian Cloning. BioConferences International Inc.: Mammalian Cloning: Implications for Science and Society. Washington D.C. June.

1997 Immunological Approaches and Considerations For Antiviral Therapy. Hepatits B Foundations, 3rd Annual Princeton Workshop. Princeton, NJ. September.

1997 Engineering Improved DNA Vaccines for HIV1. 5th International Workshop on Tolerance and Immune Regulation. September.

1997 Animal Models Session. Second Annual Meeting of the Institute of Human Virology. Baltimore, MD. September.

1997 DNA AIDS Vaccines: Of Mice and Humans. Society of Toxicology, Fall Scientific Meeting. Philadelphia, PA. November.

1997 (gene therapy) Therapeutic Immunology Subcommittee of the ACTG Immunology Research Agenda Committee. Arlington, VA. December.

1998 T-Cells as Reservoirs for HIV Under HAART: Therapeutic Options and biological Requirements. Cellular and Systemic Reservoirs for HIV Replication Under Highly Active Antiretroviral Therapy. Dedham, MA. February.

1998 Engineering DNA Vaccines for HIV-2. National Cancer Institute. Bethsada, Maryland. February.

1998 Acquired immune deficiency syndrome (AIDS): DNA vaccines. Advanced Seminar in Gene Therapy. Philadelphia, PA. Spring.

1998 Gene Therapy. AAAS Symposium. Philadelphia, PA. February.

1998 Multicomponent DNA Vaccines for HIV. National Immunology Investigators Meeting. Bodega Bay, CA

1998 Assembly of Multicomponent DNA Vaccines. Gene Therapy Seminar Series. Ann Arbor, Michigan. May .

1998 Analysis of Multicoponent DNA Vaccines for HIV-1. DAIDS Workshop on Primate Evaluations of AIDS Vaccines (NIH). Bethsada, Maryland, May.

1998 Building DNA Gene Vaccines for HIV. The American Society of Gene Therapy, 1st Annual Meeting. Seattle, Washington. May.

1999 Next Generation DNA Vaccines: the HIV Model. 2nd Annual Capture Your Share of the Vaccine Market. Washington, D.C. June.

1999 A Worldwide approach to HIV Vaccine Development. 1998 Meeting of the Institute of Human Virology. Baltimore, M. D. August.

1999 HIV-1 DNA Vaccines for Thailand: Center For Vaccine Development. Bangkok, Thailand. August.
1999 Vaccine for HIV-1: Seaside Immunology Conference. October.
1999 Engineering Multicomponent HIV Vaccines, IRCM, Clinical Research Institute of Montreal, Montreal,Quebec. October.
1999 Advance in Plasmid vaccine technology, application to HIV-1. WHO International Meeting on DNA Vaccines, Langen Germany. October.
1999 Development and Clinical Progress of DNA Vaccines, Langen, Germany. Paul-Ehrlich-Institut October.
1999 Regulating Immune Response to a Multicomponent DNA Vaccine. A Century of Immunobiological Innovation. Berne, Switzerland. November
1999 Genes as Vaccines: An a Approach for Control of HIV-1. 1999 Genes as Vaccines: An a Approach for Control of HIV-1. 1999 USF Roy H. Behnke Distinguished Lecture. Tampa, Florida. February.
1999 Genes as Vaccines: An a Approach for Control of HIV-1. 1999 USF Roy H. Behnke Distinguished Lecture. 1999 Palm Springs Symposium, HIV Pathogenesis as a Foundation for New Therapies. Palm Springs, CA. March.
2000 Comparison of Effects of Cytokines upon Cellular and Humoral Immune Responses. Keystone Symposia, DNA Vaccines: Immune Responses, Mechanisms , and Manipulating Processing. Snowbird, Utah. April.
2000 Immune responses in primate to a DNA vaccine cocktail. 1st International Conference on Vaccine Development and Immunotherapy in HIV. Palm Beach, FL. June
2000 Engineering of DNA Vaccines for Human Immunodeficiency Virus (Plenary). World Congress on Vaccines and Immunization (2nd). Liege, Belgium. Aug - Sept
2000 Protection from disease progression and CD4 T-cell loss following mucosal challenge in macaques by plasmid vaccination. 2000 International Meeting of the Institute of Human Virology. Baltimore, MD. September.
2000 DNA vaccines in the 21st century. (plenary lecture) Japanese Society for Infes. Diseases, Haikkaido, November
2000 Advancements In Vaccines for HIV-1. (plenary lecture) Sapora Medical Center.Japan. November.
2000 Lesson learned from DNA technology, application to tuberculosis. Tuberculosis Vaccine 2000 Conference. Brown University, Providence, RI. November
2000 DNA vaccine Advances In HIV DNA Cassettes for Developing Nations-WRAIR-
2000 Engineering DNA Vaccines for HIV-1. Jefferson Center Biomedical Research Seminar. Thomas Jefferson University, Philadelphia, PA. December.
2001 DNA Vaccines and Molecular Adjuvants, NIBSC/MRC, England
2001 DNA Immunization as a Discovery Tool and Prophylactic Strategy for HIV-1. Special Guest Seminar, USF. Tampa, FL. March
2001 HIV-1vpr interferes with plasmid vaccine effectiveness in vivo, Keystone Symposia on HIV Pathogenesis & Vaccines, April, Colorado
2001 Second Generation DNA Vaccines – IAVI-Special Emphasis meeting DNA Vaccines, April, NYC
2001 DNA Vaccination as an immune therapeutic Approach for HIV-1, IHV Immune therapy meeting, April, Baltimore
2001 Designing a Vaccine for HIV-1, Nobel Symposia on DNA vaccines, Stockholm, June
2001 Advances in DNA Vaccine Technology, Plenary Lecturer, ESACT Meeting, Holmstadt, Sweden, June
2001 Are we Making Progress with DNA vaccines?, University of Pennsylvania, Department of Medicine, Allery and Immunology Seminar Series, June
2001 Gene Based Approaches for Human Disease, Wharton Seminars in Biotechnology, July, Philadelphia
2001 IL-15 enhances potency of a DNA vaccine for HIV-1, Baltimore Committee Vaccine Meeting, Philadelphia, September

2001 Building a better Molecular Adjuvants for HIV-1 Vaccines, IHV Annual Meeting, Baltimore
2001 Advancements in DNA Vaccine Technology, (Plenary Speaker) MPIIER Immunology of the Eye Meeting, Oklahoma, October
2001 Clinical Implementation of DNA vaccines for HIV-1, VTN working group meeting, October, Seattle
2001 Where are we with DNA Vaccines for HIV-1, (Plenary Speaker) Pediatric IDSA Annual meeting, October, California
mmune therapy, IHGT Seminar Series, U. Pennsylvania, Philadelphia, November
2001 HIV-1 vpr suppresses immune responses in non human primates-Annual Meeting of Primate immunology and Vaccinology, Puerto Rico. , November.
2002 Building the Next Generation of DNA Vaccines for HIV-1, Vaccine Research Center Seminar Series, National Institute of Health, Bethesda.
2002 Bioethics and Bioterrorism Conference, Presented by the Center for Bioethics at the University of Pennsylvania and the Center for Biomedical Ethics at the University of Virginia. Washington, DC, February
2002HIV Therapies: Bench to Bedside, Palm Springs, CA. March
2002 Engineering Potent HIV-1 DNA vaccines, Keystone DNA Vaccines Meetings. Keystone, Colorado. April
2002Vaccines for HIV-1 from Bench to Bedside, .FASEB Mtg., New Orleans, LA. April
2002HIV DNA Vaccines at the Crossroads, Clinical Virology Meeting, Clearwater, Florida. May.
2002Improving HIV-1 DNA Vaccines for Immunotheraphy-Immune mechanisms in HIV disease. Cleveland, OH, May.
2002 Engineering Potent Safe DNA Vaccines - Pathology Grand Rounds, Thomas Jefferson Medical School. Philadelphia, PA. May.
2002 Pushing the envelope of DNA vaccine technology, Third World congress on Vaccines and Immunisation. Opatja, Adriatic Riviera, Croatia. (Conference Co Chairman) June.
2002 DNA vaccination in the context of Immune Therapy- ACTG Washington, DC, July
2002 Designing DNA vaccines for agents of Bioterrorism – AVIDEX, Toronto Canada, October
2002 HIV vaccine development, clinical implementation issues for the developing world – Wharton Impact Conference: Pharmaceutical Innovation in the Global Economy -Philadelphia October
2002 Agents of Bioterrorism: What are the risks for our current vaccines and how do we approach them? National Defense and Human Research Protections Conference, Washington, DC October
2002 Where are we in the development of a DNA vaccines for HIV-1?, International DNA Vaccines Meeting, Edinburgh, UK October
2002 The Next Generation of DNA Vaccines, National Cancer Institute lecture series, December
2003 Not Your Mothers DNA Vaccines, Institute for Human Virology, University of Maryland lecture Series, January
2003DNA Vaccines for HIV immune therapy, Wistar Institute, January
2003 DNA Vaccines for HIV –1, What's next?, Johns Hopkins University, January
2003 What have we learned regarding the next generation of DNA vaccines for HIV-1, Karolinska Institute lecture series, Stockholm, February
2003 Engineering DNA vaccines for HIV-1 in the context of Immune therapy 10th annual conference on Retroviruses and opportunistic infections, invited speaker, Boston, February.
2003 Cytokine Adjuvants for DNA vaccines: A critical breakthrough in the technology- HIV Vaccine Development- Keystone Symposia Invited Speaker, Banff, March.
2003 Vaccines in 2003: U. of Pennsylvania CFAR Press Educational Meeting, Philadelphia, April.
2003 Engineering Apoptosis to drive DNA vaccine induced immunity in vivo, ASM Annual Meeting Invited Speaker, Washington, DC, May
2003 Targeting HIV treatment through engineered DNA vaccines in patients on ART, International Conference on Immune Reconstitution and Control of HIV, Stressa, Italy, June.

2003 Cytokine enhancement of DNA vaccines for HIV-1 immune therapy and prophylaxis, Henry M. Jackson Foundation, Invited Seminar, Maryland, June
2003 Where is the DNA vaccine field going for HIV-1 Vaccines? Critical Path Breakfast Forum Speaker Series, Philadelphia, PA, June
2003 Effects of cytokine adjuvants on Plasmid DNA vaccine potency, Knowledge Foundation Forum on HIV Vaccines, Boston MA, June
2003 Cytokine adjuvants enhance DNA priming in non human primates, Basic Research Library, NCI/NIH Bethesda, MD, June
2003 HIV Accessory genes in viral replication, PRI Group Meeting, Rariton NJ, July
2003 DNA Vaccines for HIV immune therapy, ACTG, Arlington, VA, August
2003 Improved potency DNA Vaccines, USAMRIID, Ft. Detrich, MD, September
2003 HIV-1 Vpr interacts with a novel GR related receptor to suppress host cell immune responses, Annual meeting of the Institute for Human Virology, Baltimore, MD
2003 Potent CD8 T cell immunity can be induced by engineered DNA vaccines in non human primates, Cell and Molecular Biology Graduate Student Retreat, Faculty Speaker, Philadelphia, PA, October
2003 Ramping up the immune response to DNA vaccines by defined molecular adjuvants, Immune Modulation Symposium, J and J Annual symposia, Malvern, PA, October
2003 New strategies for control of HIV replication and pathogenesis targeting the VPR gene product of HIV-1. NIH Clinical Center- Special Lecture- November
2003 Status of HIV DNA Vaccine Development – Brown University- December
2004 T helper indcpendent DNA vaccines for HIV-1. 2nd NIH sponsored HIV Immune Therapy Workshop, Reston, VA, January
2004 Cytokine Adjuvanted DNA vaccines that drive strong cellular immunity in non human primates. Keystone Meeting on Rational Design of Vaccines and Immune Therapeutics, Keystone, CO January

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